

Iberobathynella notenboomi, spec. nov. from a well in Alicante, South-East Spain

(Syncarida, Parabathynellidae)

By Ana Isabel Camacho

Camacho, A. I. (1989): *Iberobathynella notenboomi*, spec. nov. from a well in Alicante, South-East Spain. — *Spixiana* 12/2: 105–113

A new species of the genus *Iberobathynella* Schminke, 1973, is described from Spain. Including this, 11 species of this genus have been described from the Iberian Peninsula. The material comes from a well located near Orihuela (Alicante), and the species has been found in this locality twice, always represented by but a small number of specimens and together with abundant material of the species *I. fagei*.

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Introduction

During the last five years, sampling of the Iberian Peninsula aquatic subterranean and interstitial habitats has been intensified (Notenboom & Meijers 1985; Hurk & Leys 1986; Camacho 1987). Consequently, therefore, the number of syncarid species recorded has increased.

Since Schminke (1973) proposed the genus *Iberobathynella* for five species from Portugal and one from the Eastern Pyrenees in France (*Parabathynella fagei* Delamare Deboutteville, 1950; *P. lusitanica* Brage, 1949; *P. gracilipes* y *P. cavadoensis* Noodt & Galhano, 1969; *P. mateusi* Galhano, 1967) six additional species from the Iberian Peninsula (*I. asturiensis* and *I. espaniensis* Serban & Comas i Navarro, 1978; *I. rouchi* Camacho & Coineau, 1987 a; *I. imuniensis* Camacho, 1987 b; *I. ortizi* Camacho, in press; and *I. notenboomi*, spec. nov.), one from Marocco (*I. maghrebensis* Boutin & Coineau, in press) and one from North America, California (*I. californica* Schminke & Noodt, 1988) have been described.

The new species, *I. notenboomi*, has been found twice in a well near Orihuela (Alicante), but the number of specimens was low. The body size is enormous compared with the size of specimens of *I. fagei* found in great numbers in the same locality. The second collection was made by Prof. Cl. Boutin at the request of Dr. N. Coineau, to support our research with sufficient material for a detailed description.

Iberobathynella notenboomi, spec. nov.

Material. Holotype (♂): Well in the neighbourhood "Los Picos", Pilar de la Horadada, Orihuela (Alicante) (XG 932943). Paratypes (3♂ and 4♀), same data as holotype. All specimens have been dissected. Holotype deposited in the Museo Nacional de Ciencias naturales in Madrid, Spain.

Etymology. The new species is dedicated to Mr. Jos Notenboom, who kindly supplied us with this material of Syncarida collected in Spain.

Description

Size. Total length of ♂: 2.2–2.8 mm.; total length of ♀: 2.4–2.7 mm. They are big in size and they look solid and strong. Body elongated, and segments lengthened and widened towards posterior end of body.

Antenna I (Fig. 1 A): 7-segmented. Length increases from 1st to 3rd segment; 4th and 5th are shorter, 6th and 7th a little longer than preceding segments. First three segments longer than last four. No

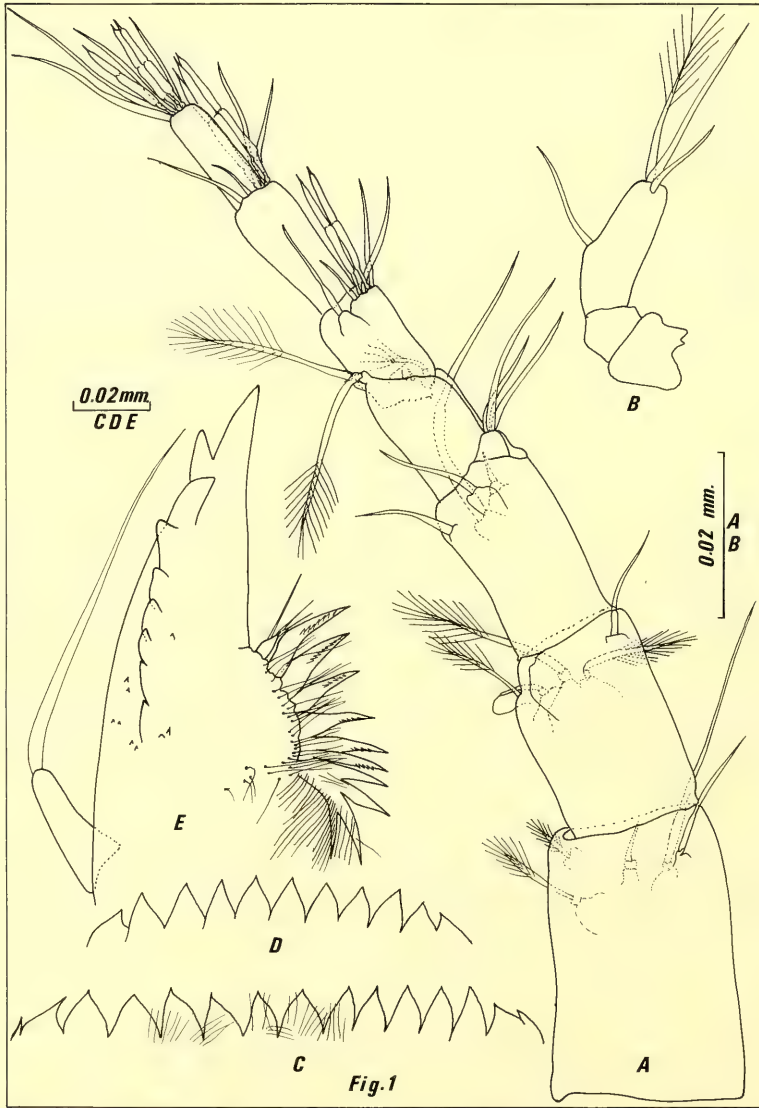


Fig. 1. *I. notenboomi*, spec. nov. A. Antenna I (male), B. Antenna II (male), C. Labrum (abnormal male), D. Labrum (male), E. Mandible (female).

sexual dimorphism. Setation: as in Fig. 1 A, segment 5 with two, segments 6 and 7 with three aesthetascs.

Antenna II (Fig. 1 B): Very small, 3-segmented, first two segments without setae, last segment with three terminal setae and an additional one halfway on outer margin.

Labrum (Fig. 1 C and D): With 9–11 large apical teeth, only in one female 9 teeth were found and 11 teeth in the other males and females. A pair of small and sharp teeth on either end. Abundant denticles spreading in groups all over the surface, and setae at base of central teeth.

Mandibles (Fig. 1 E): Pars incisiva with 5 to 9 distal teeth. Proximal tooth of pars incisiva on ventral mandibular margin triangular, with 4 strongly developed setae. Pars molaris with 5–7 strong distal

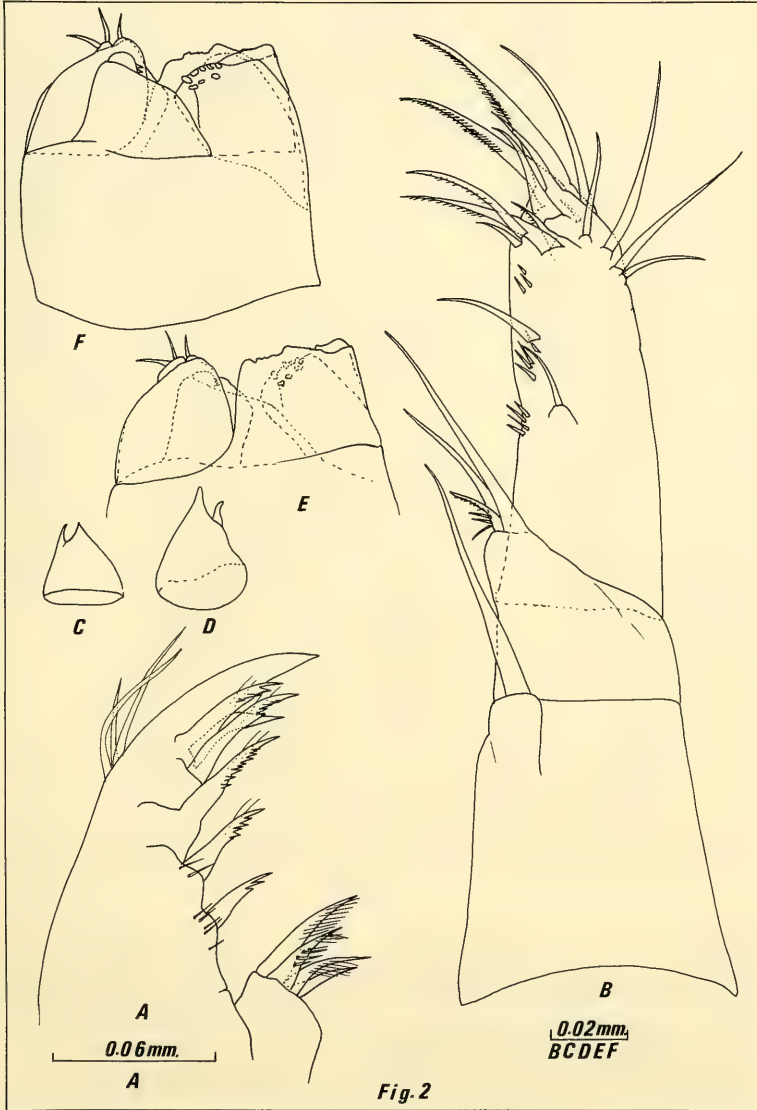


Fig. 2. *I. notenboomii*, spec. nov. A. Maxilla I (female), B. Maxilla II (female), C, D. Th 8 female (dorsal view), E. Th 8 male (outer lateral view), F. Th 8 male (ventral lateral view).

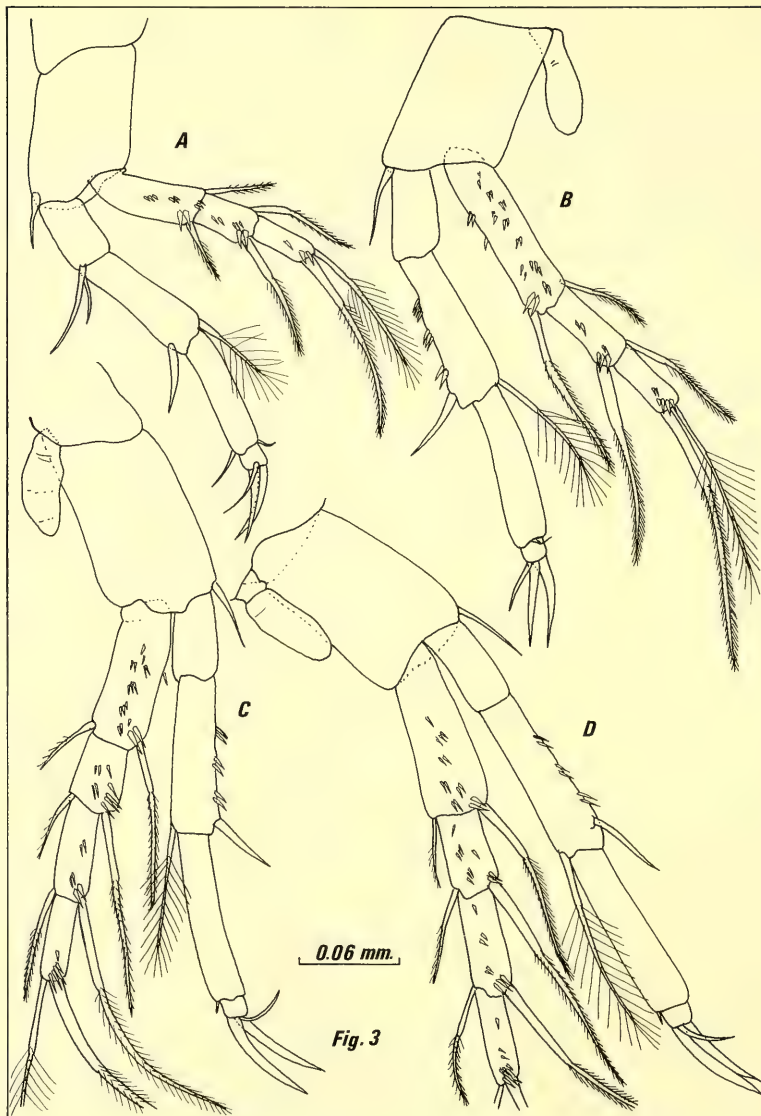


Fig. 3. *I. notenboomi*, spec. nov. A. Th 1 (male), B. Th 2 (male), C. Th 3 (male), D. Th 4 (male).

teeth with denticles and 3–5 proximal teeth without denticles but with high number of fine setae. Groups of setae inserted on base of teeth. Mandibular palp with a long base not surpassing pars incisiva.

First maxilla (Fig. 2a): Two endites; distal endite with seven teeth; two smooth apical ones, distal one being longest, the other four with spines and setae. Three subterminal setae on outer border. Proximal endite with four serrate spines of different size.

Second maxilla (Fig. 2B): 3-segmented; setal formula 1, 4, 15. In ventromedial position there are groups of spines.

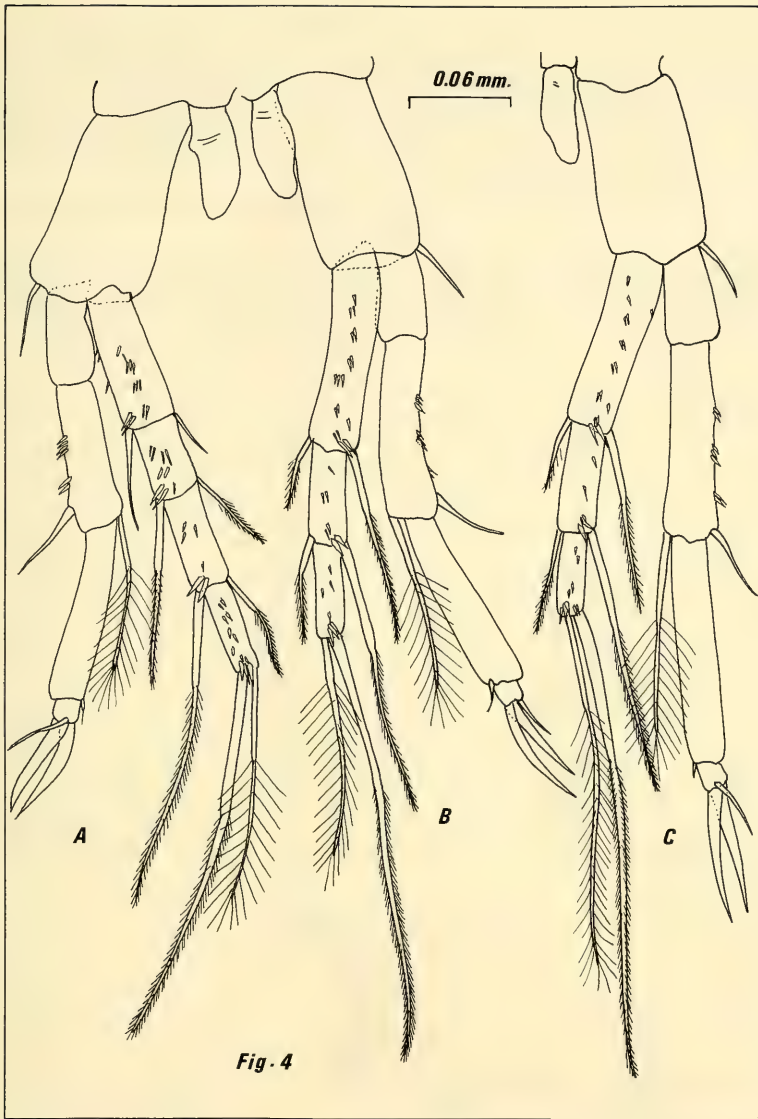


Fig. 4. *I. notenboomi*, spec. nov. A. Th 5 (male), B. Th 6 (male), C. Th 7 (male)

Thoracopods 1–7 (Fig. 3 A, B, C and D; Fig. 4 A, B and C): 7 pairs of welldeveloped thoracopods. Length gradually increasing from pair 1 to 4, last three pairs similar in size. Thoracopod I without epipodite and with one seta at distal end of basipodite. Thoracopods II–VII with epipodite and one seta at distal inner margin of basipodite. Number of segments of exopods of thoracopods I–VII: 3, 3, 4, 4, 4, 3, 3; with two terminal setae on the last segment and one dorsal and one ventral seta on the others segments. Endopod of thoracopods I–VII 4-segmented, setal formula:

Th. I 2+0/1+1/1+1/2 (1).

Th. II–VII 0+0/1+1/0+1/2 (1).

Thoracopod 8♂ (Fig. 2 E and F): Large, wider than long. Outer lobe not triangular but trapezoidal; dental lobe with 8 teeth, large and square; inner lobe with distal region square and serrate. Exopod large, with two spines; basipod globe-shaped, big and with rounded ends, with a small smooth seta at end. Endopod small not projecting, ending in two small and smooth setae of equal size.

Thoracopod 8♀ (Fig. 2 C and D): Large, triangular, with two distinct teeth, one terminal, the other subterminal, elongated and rounded at tip.

Dorsal margin of the pleotelson (Fig. 5 B): Anal operculum not protruding. Laterally one ciliated seta.

Uropods (Fig. 5 A): Sympod half wider than long, with 11 small ciliated spines, all of same size. Endopod much longer than exopod, lanceolate, with one plumose seta on the proximal half of the outer



Fig. 5. *I. notenboomi*, spec. nov. A. Uropod (male, ventral view), B. Pleotelson and furca (male, dorsal view), C. Furca (male, lateral view).

face, with two distal rows of teeth. Exopod with four ciliated setae, distal one longest, and with one small plumose seta basiventrally.

Furca (Fig. 5 B and C): Rounded, with 8–12 spines, the two distal with short and thick secondary setae. Rim of furca at base of terminal spine covered with row of setules; two dorsal setae, one large, plumose, the other shorter, ciliated.

Discussion

The new species shows the diagnostic features of the genus *Iberobathynella* Schminke, 1973. Furthermore, the structure of thoracopods VIII of both sexes shows the characteristic features of the genus (Serban 1977).

The group, that Schminke (1973) named “*fagei*”, included the species *I. fagei*, *I. lusitanica*, and *I. gracilipes*. Now it includes also the species *I. espaniensis*, *I. asturiensis*, *I. imuniensis*, *I. rouchi*, and *I. maghrebensis*. The group is characterized by the following features:

non-projecting anal operculum

one seta on segment 1 of Mx II

two setae on segments 1 and 2 of the endopod of thoracopod 1 (Th 1)

The new species, *I. notenboomi*, has 7 teeth on distal endite of Mx I, a feature shared by all species of the “*fagei*” group, except for *I. imuniensis* and *I. rouchi*. These two species have only one segment in Th 1 exopod and two segments in the exopods of the Th 2 to Th 7, while our new species has three segments in the Th 1 exopod and 3–4 segments in the exopod of Th 2 to Th 7. In spite of their differences, the general shape and the outer lobe of Th 8 are very similar in *I. imuniensis* and *I. notenboomi*.

The new species, together with *I. gracilipes* and *I. lusitanica*, is one of the largest of the genus. The principal differences with these two species and with *I. espaniensis* are:

absence of setae on distal region of inner lobe of Th 8 male

presence of 3 segments on exopod of Th 1 (the others have only two)

presence of 3–4 segments on exopod of Th 2 to Th 7 (the other have always two)

endopod of uropod larger than exopod.

I. notenboomi, *I. fagei* and *I. maghrebensis*, new combination, can be distinguished by the following features:

endopod of uropod with only one seta

spines of sympod equal in size

3–4 segments on exopod of the thoracopods II–VII.

I. notenboomi shares with *I. fagei*, but not with *I. maghrebensis*, the following characters:

endopod of uropod larger than exopod

3 segments in exopod of Th 1

mandibular palp of almost the same length as distal end of Md

exopod and endopod of Th 2 to Th 5 of equal length

3 aesthetes on segment 7 of AI.

I. notenboomi shares with *I. maghrebensis*, but not with *I. fagei*, the following characters:

presence of a dentate inner lobe in Th 8 of male

general aspect, type and shape of teeth of Th 8 in female.

The characters that it does not share with these two species are:

presence of 2 setae on segment 2 of exopod of Th 1

number of teeth in labrum

length of segments of AI and number of setae.

The exclusive characters of the new species are:
number of teeth in labrum
presence of a large number of small denticles in pars distalis of Md
number of teeth of segment 3 of Mx II
general shape of Th 8 in male and trapezoidal shape of outer lobe of Th 8 in male.

Distribution of *I. notenboomi* (Fig. 6)

This species has been found in a well located in "Barrio de los Picos", Pilar de la Horadada, Orihuela (Alicante). It was found for the first time in February 1984, then again in August 1985.



Fig. 6. Distribution of *Iberobathynella notenboomi*, spec. nov. in Spain.

Resumé

Une nouvelle espèce du genre *Iberobathynella* Schminke, (1973), est décrite; celle-ci a été trouvée dans un puits d'Espagne du sud-est (Alicante). La nouvelle espèce y a été capturée ensemble avec un nombre beaucoup plus important d'exemplaires d'*Iberobathynella fagei* (Delamare Deboutteville & Angelier, 1950).

Acknowledgements

First of all I want to thank Mr. J. Notenboom and Prof. Cl. Boutin who collected the material and handled over to me generously for this study. Also to Dr. N. Coineau who read the description. Dr. A. G.-Valdecasas and M. Ali Gago helped me with the English text. Thanks are also due to C. Puch and my colleagues at the Museo Nacional de Ciencias Naturales de Madrid, and to CAYCIT (Madrid) for financial support of this work.

References

- Boutin, C. & N. Coineau (in press). Présence du genre *Iberobathynella* sur le continent africain. Implications paléogéographiques. — C. R. Acad. Sciences Paris
Braga, J. M. (1949). Un Bathynellidae (Crust. Syncarida) du Portugal. — Publ. Inst. Zool. "Dr. A. Nobre" 40: 1–15
Camacho, A. I. (1987a). A new subterranean Sincarid (Crustacea) from Spain: *Iberobathynella imuniensis* n. sp. (Bathynellacea, Parabathynellidae). — Arch. Hydrobiol 11(1): 137–149

- (1987). La Familia Parabathynellidae (Crustacea, Syncarida, Bathynellacea) en la Península Ibérica: Taxonomía, Filogenia y Distribución. – Unpublished Tesis Doctoral, U. A. M., 900pp
- (in press). A new species of the “*mateusi*” group: *Iberobathynella ortizi* sp. n. (Crustacea, Syncarida, Parabathynellidae) – Zoologica Scripta
- & N. Coineau (1987b). Un nouveau représentant du genre *Iberobathynella* Schminke en Espagne: *I. rouchi* n. sp. (Syncarida, Bathynellacea). – Stygologia 3(2): 125–137.
- Delamare Deboutteville, Cl. & E. Angelier (1950). Sur un type de Crustacé phréatique nouveau: *Parabathynella fagei* n. sp. – C. R. Acad. Sci. Paris, 231: 175–176
- Galhano, M. H. (1967). Sur une nouvelle *Parabathynella* psammique du Portugal. – Publ. Inst. Zool. “Dr. A. Nobre”, 98: 9–18
- (1970). Contribução pra o conhecimento de fauna intersticial em Portugal. *Iberobathynella lusitanica valboensis* ssp. n. – Publ. Inst. Zool. “Dr. A. Nobre” 108: 67–153
- Hurk, P. & R. Leys (1986). Descriptions of the localities visited during a stygofauna collecting trip to Southern Spain (Andalusia) june–july 1985, with preliminary results of collected taxa. – Inst. Taxonom. Zool., Amsterdam: 15 pp
- Notenboom, J. & I. Meijers (1985). Research on the groundwater fauna of Spain: list of stations and first results. – Verslagen en Technische Gegevens 42: 93 pp
- Noodt, W. & M. H. Galhano (1969). Studien an Crustacea Subterranea (Isopoda, Syncarida, Copepoda) aus dem Norden Portugals. – Publ. Inst. Zool. “Dr. A. Nobre”, 107: 1–75
- Schminke, H. K. (1973). Evolution, System und Verbreitungsgeschichte der Familie Parabathynellidae (Bathynellacea, Malacostraca). – Acad. Wiss. Lit. Mainz. math.-nat. kl., Mikrofauna Meeresboden 24: 1–192
- Serban, E. & J. Comas i Navarro (1978). Contribution à la connaissance du genre *Iberobathynella* Schminke: *I. asturiensis* n. sp. et *I. espaniensis* n. sp. nouvelles espèces d’Espagne (Bathynellacea, Parabathynellidae). – Trav. Inst. Spéol. “Emile Racovitza”, 17: 13–37